

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

BRIDGESTONE SPORTS CO., LTD.,	)	
and BRIDGESTONE GOLF, INC.,	)	
	)	
Plaintiffs,	)	
	)	
v,	)	C. A. No. 05-132 (JJF)
	)	
ACUSHNET COMPANY,	)	<b>DEMAND FOR JURY TRIAL</b>
	)	
Defendant.	)	
	)	
ACUSHNET COMPANY,	)	<b>PUBLIC VERSION</b>
	)	
Counterclaim Plaintiff,	)	
	)	
v.	)	
	)	
BRIDGESTONE SPORTS CO., LTD.	)	
and BRIDGESTONE GOLD, INC.	)	
	)	
Counterclaim Defendant.	)	

**ACUSHNET COMPANY'S OPENING BRIEF IN SUPPORT OF  
ITS PROPOSED CLAIM CONSTRUCTIONS**

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## TABLE OF CONTENTS

I.	INTRODUCTION .....	1
II.	THE PATENTS IN SUIT .....	2
III.	APPLICABLE LAW .....	4
A.	Generally .....	4
B.	The Specification and Prosecution History .....	5
C.	Extrinsic Evidence .....	7
IV.	PROPOSED CLAIM CONSTRUCTIONS IN BRIDGESTONE'S PATENTS .....	8
A.	U.S. Patent No. 5,252,652.....	8
1.	“a base rubber selected from the group consisting of polybutadiene rubber, natural rubber, polyisoprene rubber, and styrene-butadiene rubber” .....	8
2.	“about” .....	10
B.	U.S. Patent No. 6,634,961.....	12
1.	“having a viscosity $\eta$ at 25°C as a 5 wt % solution in toluene of up to 600 mPa·s” .....	13
2.	“base rubber composed of (a) 20 to 100 wt % of a polybutadiene...satisfying the relationship: $10B+5 \leq A \leq 10B+60$ , wherein A is the Mooney viscosity( $ML_{1+4}$ (100°C)) of the polybutadiene and B is the ratio $M_w/M_n$ between the weight-average molecular weight $M_w$ and the number- average molecular weight $M_n$ of the polybutadiene” .....	14
3.	“(b) 0 to 80 wt % of a diene rubber other than component(a)” .....	15
4.	“which has a cis-1,4 content of at least 60% and a 1,2 vinyl content of at most 5%, has a Mooney viscosity( $ML_{1+4}$ (100° C)) of not more than 55, and satisfies the relationship: $\eta \leq 20A-550$ , wherein A is the Mooney viscosity ( $ML_{1+4}$ (100° C)) of the	

	second polybutadiene and $\eta$ is the viscosity of the second polybutadiene, in mPa·s, at 25°C as a 5 wt % solution in toluene.”	16
C.	U.S. Patent No. 5,743,817	17
1.	“cover consists of an ionomer resin as a resin component”	17
D.	U.S. Patent No. 6,679,791	20
1.	“gradually increases”	21
2.	“a hardness at the center and a hardness at the surface thereof which is greater than the hardness at the center thereof.”	25
E.	U.S. Patent No. 5,553,852	27
1.	“a thickness of at least 1 mm” and “a thickness of 1 to 3 mm”	27
V.	PROPOSED CLAIM CONSTRUCTIONS IN ACUSHNET’S PATENTS	28
A.	U.S. Patent No. 6,818,705	28
1.	“a material [formed] from the conversion reaction of at least a cis-to-trans catalyst and a polybutadiene, wherein the material has a molecular weight of greater than about 200,000 and a resilience index of at least about 40”	29
2.	“resilience index”	32
B.	U.S. Patent Nos. 4,729,861, 4,936,587, and 5,080,367	34
1.	“determining the dimple number, dimple diameter and dimple depth by: (a) selecting the number of dimples to be used, the said number of dimples being between 182 and 392; (b) selecting a dimple diameter and dimple depth”	34
2.	“edge”	35
VI.	CONCLUSION	37

**TABLE OF AUTHORITIES****CASES**

<i>Abbott Labs. v. Baxter Pharm. Prods.</i> , 334 F.3d 1274 (Fed. Cir. 2003).....	7, 8, 9, 18
<i>Alpex Computer Corp. v. Nintendo Co.</i> , 102 F.3d 1214 (Fed. Cir. 1996).....	6
<i>Athletic Alternatives v. Prince Mfg.</i> , 73 F.3d 1573 (Fed. Cir. 1996).....	4
<i>Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc.</i> , 262 F.3d 1258 (Fed. Cir. 2001).....	7
<i>BJ Services Co. v. Halliburton Energy Services</i> , 338 F.3d 1368 (Fed. Cir. 2003).....	11
<i>Brown v. 3M</i> , 265 F.3d 1349 (Fed. Cir. 2001).....	35
<i>Chef Am., Inc. v. Lamb Weston, Inc.</i> , 358 F.3d 1371 (Fed. Cir. 2004).....	35
<i>CVI/Beta Ventures, Inc. v. Tura LP</i> , 112 F.3d 1146 (Fed. Cir. 1997).....	6
<i>Cybor Corp. v. FAS Techs.</i> , 138 F.3d 1448 (Fed. Cir. 1998).....	4
<i>Eli Lilly &amp; Co. v. Aradigm Corp.</i> , 376 F.3d 1352 (Fed. Cir. 2004).....	35
<i>Ex Parte Markush</i> , 1925 C.D. 126 (Comm'r Pat. 1925).....	7
<i>Hill-Rom Co. v. Kinetic Concepts, Inc.</i> , 209 F.3d 1337 (Fed. Cir. 2000).....	5
<i>Hockerson-Halberstadt, Inc. v. Avia Group Int'l</i> , 222 F.3d 951 (Fed. Cir. 2000).....	20
<i>In re Paulsen</i> , 30 F.3d 1475 (Fed. Cir. 1994).....	33

<i>Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.</i> , 381 F.3d 1111 (Fed. Cir. 2004).....	17
<i>Inpro II Licensing v. T-Mobile USA, Inc.</i> , 450 F.3d 1350 (Fed. Cir. 2006).....	26
<i>Kegel Co. v. AMF Bowling</i> , 127 F.3d 1420 (Fed. Cir. 1997).....	7
<i>Kinik Co. v. Int'l Trade Comm'n</i> , 362 F.3d 1359 (Fed. Cir. 2004).....	26
<i>Mannesmann Demag Corp. v. Engineered Metal Prods. Co.</i> , 793 F.2d 1279 (Fed. Cir. 1986).....	9
<i>Markman v. Westview Instr.</i> , 52 F.3d 967 (Fed. Cir. 1995).....	4, 5
<i>Markman v. Westview Instr.</i> , 517 U.S. 370 (1996).....	4
<i>Merck &amp; Co. v. Teva Pharms. USA, Inc.</i> , 395 F.3d 1364 (Fed. Cir. 2005).....	33, 35
<i>Modine Mfg. Co. v. United States Int'l Trade Comm'n</i> , 75 F.3d 1545 (Fed. Cir. 1996).....	11
<i>Multiform Dessicants, Inc. v. Medzam Ltd.</i> , 133 F.3d 1473 (Fed. Cir. 1998).....	5
<i>Norian Corp. v. Stryker Corp.</i> , 432 F.3d 1356 (Fed. Cir. 2005).....	6
<i>Nystrom v. Trex Co.</i> , 424 F.3d 1136 (Fed. Cir. 2005).....	6
<i>Pfizer Inc. v. Ranbaxy</i> , 457 F.3d 1284 (Fed. Cir. 2006).....	32
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005) ( <i>en banc</i> ) .....	<i>passim</i>
<i>Phonometrics, Inc. v. N. Telecom</i> , 133 F.3d 1459 (Fed. Cir. 1998).....	6

<i>Pitney Bowes, Inc. v. Hewlett-Packard Co.</i> , 182 F.3d 1298 (Fed. Cir. 1999).....	7
<i>Read Corp. v. Portec, Inc.</i> , 970 F.2d 816 (Fed. Cir. 1992).....	5
<i>Renishaw PLC v. Marposs Societa' per Azioni</i> , 158 F.3d 1243 (Fed. Cir. 1998).....	5, 13
<i>Rhine v. Casio Inc.</i> , 183 F.3d 1342 (Fed. Cir. 1999).....	32
<i>Southwall Techs., Inc. v. Cardinal IG Co.</i> , 54 F.3d 1570 (Fed. Cir. 1995).....	5, 6
<i>Spectrum Int'l v. Sterilite Corp.</i> , 164 F.3d 1372 (Fed. Cir. 1998).....	20
<i>United States Surgical Corp. v. Ethicon, Inc.</i> , 103 F.3d 1554 (Fed. Cir. 1997).....	35
<i>Vehicular Techs. Corp. v. Titan Wheel Int'l</i> , 212 F.3d 1377 (Fed. Cir. 2000).....	18
<i>Vitronics Corp. v. Conceptoronic, Inc.</i> , 90 F.3d 1576 (Fed. Cir. 1996).....	5, 7, 25, 31

#### OTHER AUTHORITIES

OXFORD ENGLISH DICTIONARY, <a href="http://dictionary.oed.com">http://dictionary.oed.com</a> .....	22
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## **I. INTRODUCTION**

Defendant/Counterclaim Plaintiff Acushnet Company (“Acushnet”) files this memorandum regarding the proper construction of the disputed claim terms in the patents-in-suit.

The parties have agreed upon definitions for the overwhelming majority of the claim terms from the patents-in-suit. In most cases, the parties agree that the plain language of the claim terms apply and that no construction is required by the Court. Many of the remaining claim construction disputes are not highly complex, although in a few places the dispute between the parties is substantial in terms of the likely effect on the case. The claim construction issues for the Court generally turn on the proper application of the inventors’ express definitions and the plain meaning of the claim terms, as informed by the written description, the prosecution history, and extrinsic evidence, where appropriate.

Acushnet’s proposed constructions follow a logical order – the inventors’ express definitions in the specification govern if the inventors defined a term; otherwise, Acushnet proposes that claim terms have their plain meaning, relying on the intrinsic and extrinsic evidence to resolve any ambiguities therein. The constructions offered by Plaintiffs/Counterclaim Defendants Bridgestone Sports Co., Ltd. and Bridgestone Golf, Inc. (collectively, “Bridgestone”), on the other hand, often ignore the inventors’ express definitions, revise otherwise clear plain meanings, and rely on “plain meaning” where clarification is required. Thus the Court should construe the disputed claim terms as proposed by Acushnet.

## II. THE PATENTS IN SUIT

This patent dispute relates to technology used to make golf balls manufactured by Acushnet and Bridgestone. The golf ball art is very crowded.<sup>1</sup> The patents-in-suit cover various aspects of golf ball design, including core compositions, golf ball construction (e.g, cores and cover layers and properties thereof), aerodynamic properties and dimple configurations.

All of the golf balls at issue have solid cores made from one or more polybutadiene rubbers. Each ball has one or more cover layers disposed about the core. In some cases, the golf balls are two-piece constructions, having a single core layer and a single cover layer. Balls of this type include the Acushnet brands, Titleist NXT™, Titleist DT SoLo™, and Pinnacle Exception™. In other cases, the golf ball has a single core surrounded by two cover layers, such as the Acushnet brand Titleist Pro V1™. In still other golf balls, the core itself has more than one layer, such the Acushnet brands Titleist Pro V1x™ and Titleist NXT Tour™. A general example of solid core golf ball technology is shown in Figures 1 and 2 of Acushnet's U.S. Patent No. 6,486,261:

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<sup>1</sup> Based on a search for the term "golf ball" in the United States Patent Office databases conducted on Monday, September 18, 2006, there have been 9,430 patents issued since 1976 that include the term "golf ball." There have also been 4,221 United States Patent Application Publications since 2001 that include the term "golf ball." Bridgestone's counsel acknowledged this fact during the August 2, 2006 discovery hearing. *See* Ex. A (8/1/2006 Hearing Tr. at 37:10-19 (agreeing that the golf ball art "can be" crowded)). Exhibit references herein (Ex. \_\_\_\_ ) refer to the Appendix in Support of Acushnet Company's Opening Brief in Support of its Proposed Claim Constructions, filed contemporaneously herewith.



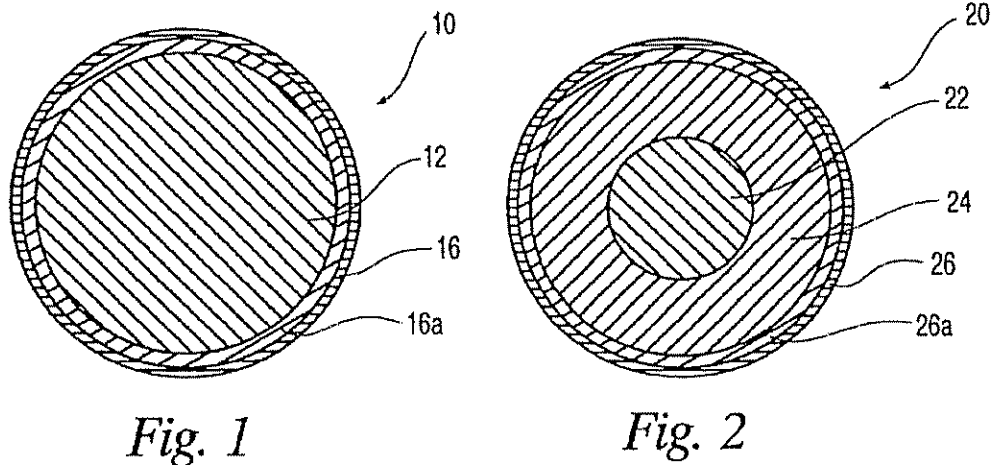


Fig. 1 shows a three-piece solid golf ball (10) with a relatively large solid core (12), surrounded by a relatively thin inner cover (16a) and a relatively thin outer cover (16). *See* Ex. B ('261 Pat., Col. 11, ll. 27-29). Fig. 2 shows a similar construction for a four-piece solid golf ball (20) having an inner core (22), an outer core (24), an inner cover (26a) and an outer cover (26). *See* Ex. B ('261 Pat., Col. 11, ll. 29-31.)

In general, both parties manufacture the solid cores of their products by polymerizing polybutadiene rubber in a mold with a number of additional ingredients, including peroxides, zinc diacrylate ("ZDA"), and an organosulfur compound, such as pentachlorothiophenol ("PCTP") or zinc salt of pentachlorothiophenol ("ZnPCTP"). The ZDA cross-links the polybutadiene chains to make a hard, resilient core. The various peroxides initiate the polymerization reaction when heated in the mold. The PCTP and ZnPCTP act to regulate the chain lengths of the polybutadiene polymer in a well-known way recognized in the rubber art for many years. Other ingredients may also be present, such as fillers and coloring agents.

Finally, all of the accused golf ball products have dimples, which improve the flight performance of golf balls. The dimples create a layer of turbulent air around the golf ball in flight, which results in longer flight distances. While golf balls may have differing numbers and shapes of dimples, all of the dimples on the accused products are spherical. An example of a dimpled golf ball is shown in Fig. 2 of Acushnet's U.S.

Patent No. 5,080,367, while Fig. 3 of Bridgestone's U.S. Patent No. 5,782,707 shows a dimple in isolation:

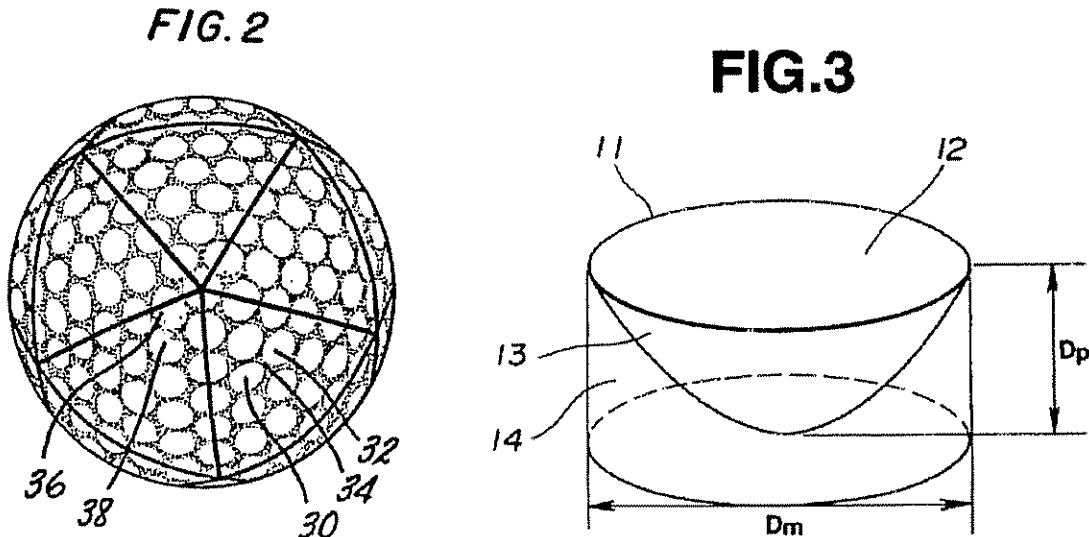


Fig. 2 generally shows how the dimples are arranged on a golf ball. Fig. 3 shows the dimple edge (11) that lies on the surface of the golf ball, while the spherical section (13) is the indentation of the dimple into the golf ball surface.

### III. APPLICABLE LAW

#### A. Generally

Claim construction is a legal issue “exclusively within the province of the court.” *Markman v. Westview Instr.*, 517 U.S. 370, 372 (1996); *Cybor Corp. v. FAS Techs.*, 138 F.3d 1448 (Fed. Cir. 1998). Predictable claim interpretation is essential to the patent system because the claims give notice to the world regarding the scope of the invention. *See Athletic Alternatives v. Prince Mfg.*, 73 F.3d 1573, 1581 (Fed. Cir. 1996).

Claim construction begins with an examination of the words of the claim. *See Markman v. Westview Instr.*, 52 F.3d 967, 976 (Fed. Cir. 1995). Absent compelling evidence to the contrary, the words of a claim are generally given their ordinary and customary meaning, *i.e.*, “the meaning that the term would have to a person of ordinary

skill in the art in question at the time of the invention.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (*en banc*). When the patentee gives a special definition to a claim term that differs from the meaning it would otherwise possess, however, the inventor’s lexicography governs. *Id.* at 1316.

### **B. The Specification and Prosecution History**

“‘[T]he best source for understanding a technical term is the specification from which it arose, informed, as needed, by the prosecution history.’” *Phillips*, 415 F.3d at 1315 (quoting *Multiform Dessicants, Inc. v. Medzam Ltd.*, 133 F.3d 1473, 1478 (Fed. Cir. 1998)). *See also Markman*, 52 F.3d at 979 (“Claims must be read in view of the specification, of which they are a part.”).<sup>2</sup>

The specification “is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.”

*Phillips*, 415 F.3d at 1315, quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). *See also Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995); *Read Corp. v. Portec, Inc.*, 970 F.2d 816, 823 (Fed. Cir. 1992). “[T]he construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.” *Phillips*, 415 F.3d at 1316, quoting *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998).

The specification “acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication.” *Phillips*, 415 F.3d at 1321, quoting *Vitronics Corp.*, 90 F.3d at 1582. For example, when the patentee consistently uses a term in one way, the term should be limited to that meaning. *See Nystrom v. Trex Co.*,

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<sup>2</sup> The specification of a patent includes not only the claims, written description and drawings, but also the abstract, which is a potentially useful source of intrinsic evidence as to the meaning of a disputed claim term. *See Hill-Rom Co. v. Kinetic Concepts, Inc.*, 209 F.3d 1337, 1341 n.\* (Fed. Cir. 2000).

424 F.3d 1136, 1145 (Fed. Cir. 2005). Simply stated, it is improper to start with a broader definition simply because it is found in a dictionary. *Id.* To do so fails to appreciate how the specification implicitly limits that definition and causes the construction of a term to be unduly expansive. *See Phillips*, 415 F.3d at 1321.

Furthermore, absent compelling evidence of a contrary intent, a claim term should be construed consistently with its appearance in other places in the same claim or in other claims of the same patent. *See Phonometrics, Inc. v. N. Telecom*, 133 F.3d 1459, 1465 (Fed. Cir. 1998) (“A word or phrase used consistently throughout a claim should be interpreted consistently.”); *CVI/Beta Ventures, Inc. v. Tura LP*, 112 F.3d 1146, 1159 (Fed. Cir. 1997) (“We are obliged to construe the term ‘elasticity’ consistently throughout the claims.”); *Southwall Techs.*, 54 F.3d at 1579 (claim terms found in different claims should be interpreted consistently).

In addition to the specification, “the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Phillips*, 415 F.3d at 1317. *See also Alpex Computer Corp. v. Nintendo Co.*, 102 F.3d 1214, 1220 (Fed. Cir. 1996) (“Prosecution history is relevant not only for purposes of prosecution history estoppel but also for construing the meaning and scope of the claims.”)

In some cases, certain patent claim terminology has legal import that can supersede even the plain meaning. For example, the term “comprising” has a longstanding traditional legal meaning as an open transitional phrase, while the phrase “consisting of” has a similar longstanding traditional legal meaning as a closed transitional phrase. *See Norian Corp. v. Stryker Corp.*, 432 F.3d 1356, 1359 (Fed. Cir. 2005). Also, a phrase in the form of “a member selected from the group consisting of A, B, and C” is known as a Markush group, after an old Court of Claims and Patent Appeals case dealing with such a group. *See Ex Parte Markush*, 1925 C.D. 126 (Comm’r Pat.

1925); *Abbott Labs. v. Baxter Pharm. Prods.*, 334 F.3d 1274, 1280 (Fed. Cir. 2003). In general, the use of an indefinite article such as “a” or “an” in patent claims is understood to mean “one or more.” *See Abbott Labs.*, 334 F.3d at 1281. In connection with a Markush group, however, the use of “a” or “an” with “consisting of” restricts to the use of the indefinite article to only one member of the group. *Id.*

### C. Extrinsic Evidence

A court may also consider extrinsic evidence (*e.g.*, expert testimony, treatises, and dictionaries) to resolve the scope and meaning of a claim term. *See Kegel Co. v. AMF Bowling*, 127 F.3d 1420, 1426 (Fed. Cir. 1997). Extrinsic evidence may be employed to ensure that the claim construction based on intrinsic evidence is not inconsistent with how a person skilled in the art would understand a claim term. *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308-09 (Fed. Cir. 1999). Extrinsic evidence, however, “may not be used to vary, contradict, expand, or limit the claim language from how it is defined, even by implication, in the specification or [prosecution] history,” *Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc.*, 262 F.3d 1258, 1269 (Fed. Cir. 2001).

Dictionaries and treatises can be helpful in discerning the meaning of claim terms. *Phillips*, 415 F.3d at 1318. In *Vitronics*, the Federal Circuit held that technical dictionaries and treatises are extrinsic evidence worthy of special note; judges are free to use them “at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents.” *Vitronics Corp.*, 90 F.3d at 1584 n.6; *accord Phillips*, 415 F.3d at 1324.

#### IV. PROPOSED CLAIM CONSTRUCTIONS IN BRIDGESTONE'S PATENTS

##### A. U.S. Patent No. 5,252,652

This patent relates to the use of PCTP or other organosulfur compounds in a golf ball core. *See* Ex. C ('652 Pat., Abstract). It is one of several Bridgestone patents-in-suit where Bridgestone sought to claim well-known properties of rubbers or inherent properties of rubbers used in golf ball cores while asserting that it “discovered” something new in the art. There are several claim terms at issue.

1. **“a base rubber selected from the group consisting of polybutadiene rubber, natural rubber, polyisoprene rubber, and styrene-butadiene rubber”**

*Acushnet's Proposed Definition:* The use of “consisting of” in this claim means that one and only one base rubber selected from the group of polybutadiene rubber, natural rubber, polyisoprene rubber, and styrene-butadiene rubber. Joint Claim Chart at 1.

*Bridgestone's Proposed Definition:* Plain and ordinary meaning. Joint Claim Chart at 1.

The parties dispute whether the phrase “consisting of” before the list of base rubbers used for the golf ball core requires that one *and only one* of the base rubbers be used in an infringing product. As noted above, the phrase “a base rubber selected from the group consisting of ...” defines a claim grouping often used in chemical cases called a “Markush” group. A Markush group is “a listing of specified alternatives of a group in a patent claim, typically expressed in the form: a member selected from the group consisting of A, B, and C.” *Abbott Labs.*, 334 F.3d at 1280.

In general, the use of an indefinite article such as “a” or “an” in patent claims is understood to mean “one or more.” *Id.* at 1281. In connection with a Markush group, however, the rule is different. In a Markush group, the use of:

such an indefinite article used in conjunction with a Markush grouping does not receive such latitude because a proper Markush group is limited

by the closed language term “consisting of.” See *Mannesmann Demag Corp. v. Engineered Metal Prods. Co.*, 793 F.2d 1279, 1282 (Fed. Cir. 1986) (confirming that the phrase “consisting of” appearing in a clause of a claim specifically limits only the element set forth in that clause). Therefore, although “a” without more generally could mean one or more in an open-ended patent claim, “a” with “consisting of” in this case indicates only one member of a Markush group. See *KCJ Corp.*, 223 F.3d at 1356. If a patentee desires mixtures or combinations of the members of the Markush group, the patentee would need to add qualifying language while drafting the claim. See Meeting Held to Promote Uniform Practice In Chemical Divisions, *supra*, at 852 (citing examples of qualifying language such as: “and mixtures thereof” and “at least one member of the group”). Thus, without expressly indicating the selection of multiple members of a Markush grouping, a patentee does not claim anything other than the plain reading of the closed claim language.

*Abbott Labs*, 334 F.3d at 1281. In that case, the court concluded that the patentee had not expressly indicated the selection of multiple members *in the claims* and was thus limited to a single selection from the group. *Id.*

In the ‘652 patent, there is similarly no express indication in the claims that more than one member of the Markush group may be selected. To the contrary, the claim recites the basic elements of a Markush grouping: “a base rubber selected from the group consisting of polybutadiene rubber, natural rubber, polyisoprene rubber and styrene-butadiene rubber.” Ex. C (‘652 Pat., Col. 5, ll. 7-10). While the patent does suggest in the specification examples that rubber blends may be used, without an express indication in the claims to that effect, the claim is limited, as a matter of law, to the selection of only a single member of the group. See *Abbott Labs*, 334 F.3d at 1281.

Because the claims do not expressly indicate that multiple members of the Markush group (i.e., blends of rubbers) may be selected, the phrase “a base rubber selected from the group consisting of polybutadiene rubber, natural rubber, polyisoprene rubber, and styrene-butadiene rubber” should be construed to mean that one and only one base rubber may be selected from the group.

Bridgestone’s reliance on the plain meaning of the claim fails because it does not account for the specialized legal meaning of the Markush grouping, which controls.



Accordingly, the Court should construe the term as suggested by Acushnet in the Joint Claim Chart.

## 2. "about"

Acushnet's Proposed Definition: Approximately, as would be understood by those skilled in the art to mean the precision with which the quantity the term is used to modify can be measured. Joint Claim Chart at 3.

*Bridgestone's Proposed Definition.* Approximately, in the stylistic and technological context in which it is used. Joint Claim Chart at 3.

The question for the Court is whether the term “about” for the ‘652 patent should be construed with regard to the ability to measure the quantity of the claim element modified by the word “about.” The ‘652 patent uses the term “about” to modify parts by weight of specific chemical compounds used in the golf ball core recipe:

- “about 25 to about 40 parts by weight of a zinc or magnesium salt of an unsaturated fatty acid having 3 to 8 carbon atoms,” Ex. C (‘652 Pat., Col. 5, ll. 11-13);
- “about 0.05 to about 2 parts by weight of a sulfur compound ...,” Ex. C (‘652 Pat., Col. 5, ll. 13-18); and
- “about 0.5 to about 3 parts by weight of an organic peroxide.” Ex. C (‘652 Pat., Col. 5, ll. 19-20).

The construction of the term “about” is central to the parties’ contentions regarding the ‘652 patent and may in fact be dispositive on the question of infringement for certain products. [REDACTED]

Bridgestone contends that [REDACTED] is within the literal scope of the claimed



range “about 0.05 to about 2.” See Ex. F (Pls.’ Response to Def.’s Interrog. No. 2 at 8-9, A-1, A-4, A-7, A-10, A-13, A-16).<sup>3</sup>

Acushnet’s proposed definition is supported by Federal Circuit precedent, which “illustrates the fact-dependency of determinations of the technologic scope of ‘about’ and similar terms, depending on their contexts *and the precision* or significance *of the measurements used.*” *Modine Mfg. Co. v. United States Int’l Trade Comm’n*, 75 F.3d 1545, 1554 (Fed. Cir. 1996) (emphases added).

The ‘652 patent’s use of the term “about” is directly analogous to the facts in *BJ Services Co. v. Halliburton Energy Services*, 338 F.3d 1368 (Fed. Cir. 2003). There, the disputed claim term was “a [value] of about 0.06 percent by weight.” *Id.* at 1372. The district court held, and the Federal Circuit affirmed, that the term “about” was “intended to encompass the range of experimental error that occurs in any measurement.” *Id.* at 1372-73. Here also, the plain meaning of the term “about” refers to measurements of parts by weight and should be understood to refer to the range of experimental error that occurs when taking the measurements.

By contrast, Bridgestone’s suggested definition of “about” to include “the stylistic and technological context in which it is used” has no basis in law and Bridgestone offers no insight into what its meaning might be.

[REDACTED]

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<sup>3</sup> Thus, for example, Acushnet contends that the correct construction of the term “about 0.05 to about 2 parts by weight of a sulfur compound” literally would cover 0.05 to 2 parts by weight of the sulfur compound, plus or minus the range of accuracy with which the weight percentage of the sulfur compound would be measured.

Thus, the Court should construe the term “about” for the ‘652 patent as proposed by Acushnet in the Joint Claim Chart to mean “approximately, as would be understood by those skilled in the art to mean the precision with which the quantity the term is used to modify can be measured.”

### **B. U.S. Patent No. 6,634,961**

The ‘961 patent discloses a multi-piece golf ball with a specific rubber composition used in the core. The alleged benefit of having a golf ball with the rubber composition described in the ‘961 patent is that “it gives the ball a good, soft feel upon impact and an excellent spin performance that provides increased distance.” *See* Ex. H (‘961 Pat., Abstract).

The only asserted claim is claim 2, which depends from claim 1. Claim 1 requires a first polybutadiene rubber with specific attributes, including a certain amount of cis-1,4 content and 1,2 vinyl content.<sup>4</sup> Claim 1 further requires that the polybutadiene rubber satisfy a certain relationship between its Mooney viscosity and its polydispersity.<sup>5</sup>

Dependent claim 2 allows a second diene rubber to be blended with the first polybutadiene rubber. The second diene rubber, if present, is required to have a certain amount of cis-1,4 content and 1,2 vinyl content and have a certain relationship between its Mooney viscosity and polydispersity.

Because some of these terms are likely to be foreign to most jurors, Acushnet’s proposed constructions include the definitions of these terms in the patent’s specification to ease somewhat the burden on the jury.

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<sup>4</sup> “Cis” and “vinyl” are types or “isomers” of polybutadiene. “1,4” and “1,2” are terms that describe aspects of the chemical structure of the polybutadiene isomer.

<sup>5</sup> “Mooney viscosity” refers to an index of viscosity as measured by a Mooney viscometer. Ex. H (‘961 Pat., Col. 3, ll. 46-48). “Polydispersity” refers to the ratio of the weight-average molecular weight to the number-average molecular weight.

1. “having a viscosity  $\eta$  at 25°C as a 5 wt % solution in toluene of up to 600 mPa·s”

Acushnet's Proposed Definition: Having a viscosity  $\eta$  of 600 milli Pascal seconds or less. The viscosity being defined by the specification of the '961 patent to be measured “in mPa·s units” and being “obtained by dissolving 2.28g of the polybutadiene to be measured in 50 ml of toluene and carrying out the measurement with a specified viscometer at 25°C using a standard solution for the viscometer (JIS Z8809).” Joint Claim Chart at 7.

Bridgestone's Proposed Definition: Plain and ordinary meaning. Joint Claim Chart at 7.

This disputed claim language, relating to the “viscosity  $\eta$ ” ( $\eta$  is pronounced “eta”), appears in claim 1 of the '961 patent. The '961 patent's specification sets forth a precise definition for this claim term, stating that the “viscosity  $\eta$  at 25°C as a 5 wt % solution in toluene of up to 600 mPa·s” refers to:

the value in mPa·s [“milli-Pasacal seconds” the MKS unit of viscosity] units obtained by dissolving 2.28g of the polybutadiene to be measured in 50 mL of toluene and carrying out measurement with a specified viscometer at 25°C using a standard solution for the viscometer (JIS Z8809).

Ex. H ('961 Pat., Col. 3, ll. 5-13). When a “patent applicant has elected to be a lexicographer by providing an explicit definition in the specification for a claim term,” then “the definition selected by the patent applicant controls.” *Renishaw PLC v Marposs Societa' Per Azioni*, 158 F.3d 1243 (Fed. Cir. 1998) (“The law provides a patentee with this opportunity because the public may not be schooled in the terminology of the technical art or there may not be an extant term of singular meaning for the structure or concept that is being claimed.”).

Here, the definition in the specification provides additional detail regarding how the viscosity is to be measured. For example, the definition provides *a specific method* for making the solution used to test the viscosity, (“2.28g of the polybutadiene to be measured in 50 mL of toluene.”). Ex. H ('961 Pat., Col. 3, ll. 5-13). A further example is

that the definition states that the viscosity is measured with “a specified viscometer (JIS Z8809).” Ex. H (‘961 Pat., Col. 3, ll. 5-13).

In this case, the patentees specifically defined this claim language and in so doing informed the public exactly what they intended their claim language to mean. Therefore, Acushnet requests that the Court construe this claim language consistent with the definition provided in the specification.

2. **“base rubber composed of (a) 20 to 100 wt % of a polybutadiene...satisfying the relationship:  $10B+5 \leq A \leq 10B+60$ , wherein A is the Mooney viscosity(ML<sub>1+4</sub> (100°C)) of the polybutadiene and B is the ratio Mw/Mn between the weight-average molecular weight Mw and the number-average molecular weight Mn of the polybutadiene”**

Acushnet's Proposed Definition: The base rubber composed of (a) 20 to 100 wt % of a polybutadiene that has the relationship: 10 times the polydispersity plus 5 is less than or equal to the Mooney viscosity which is less than or equal to 10 times the polydispersity plus 60.

The term polydispersity means the ratio of the weight average molecular weight (Mw) to the number average molecular weight (Mn).

As defined in the specification, “M” in the term (ML<sub>1+4</sub> (100°C)) stands for Mooney viscosity, “L” stands for large rotor, “1+4” stands for a preheating time of 1 minute and a rotor rotation time of 4 minutes, and “100°C” indicates that the measurement was carried out at a temperature of 100°C.”” Joint Claim Chart at 8.

Bridgestone's Proposed Definition: Plain and ordinary meaning. Joint Claim Chart at 8.

This claim language appears in claim 1 of the ‘961 patent. Acushnet proposes a construction that includes the definitions provided in the specification for “polydispersity” and for “Mooney viscosity.” We do not believe that Bridgestone disputes these definitions. There is no dispute that the “M” in “(ML<sub>1+4</sub> (100°C))” stands for the Mooney viscosity. Similarly, there is no dispute that the “L” stands for a measurement using the large rotor on the viscometer or that the “1+4” subscript stands

for a preheating time of 1 minute and a rotor rotation time of 4 minutes, in this case, with the measurement preformed at 100 degrees C.<sup>6</sup>

As the meaning of the claim language is not in dispute, the question is really whether this explicit definition should be provided to the jury as part of the claim construction. The claim language uses technical terms, such as Mooney viscosity, as well as technical notation. The specification defines the terms and notations used in the claim, and it is appropriate to give the jury the benefit of these definitions. It will also make it easier for the jurors to recall the expert testimony on this point if the definition of the claim terms is found in the claim construction and charge that they have with them while deliberating. Therefore, Acushnet requests that the Court adopt its proposed construction for this claim language.

**3. “(b) 0 to 80 wt % of a diene rubber other than component(a)”**

*Acushnet’s Proposed Definition:* A diene rubber, different from diene rubber (a), that ***if present***, is present in an amount not more than 80% by weight of the total rubber composition. Joint Claim Chart at 9.

*Bridgestone’s Proposed Definition:* Plain and ordinary meaning. Joint Claim Chart at 9.

This claim language appears in claim 1 of the ‘961 patent. Acushnet’s proposed construction clarifies two important points with respect to this claim limitation. First, because the claim language states that the diene rubber can be present in an amount of “0% to 80%” Acushnet’s construction clarifies that the diene rubber does not have to be present at all. The plain meaning of a claim limitation that says that it covers 0% to 80% of a second diene rubber is that the second rubber may be present in an amount up to 80%, but need not be present at all. In addition to the claim language, the specification

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<sup>6</sup> Viscosity is a measure of a liquid’s ability to flow. One way to measure viscosity is on a machine having a rotary member or rotor. The liquid is heated and the rotor is set to turn. The definition on the patent specifies the parameters for this measurement.

also supports the conclusion that the second diene rubber is not required to be present: “in addition to component (a), the base rubber *may include* also a diene rubber (b).” Ex. H (‘961 Pat., Col. 5, ll. 54-55) (emphasis added). The claim construction should make this point clear.

Acushnet’s definition also clarifies that the diene rubber (b), if present, cannot be present in more than 80% by weight of the total rubber composition. There should be no dispute over this clarification as well. The claim states that “the core is molded from a rubber composition comprising 100 parts by weight of a base rubber composed of (a) 20 to 100% of a polybutadiene...” and “(b) 0 to 80% of a diene rubber other than component (a).” Ex. H (‘961 Pat., Claim 1). Acushnet’s proposed construction is not only consistent with the plain and ordinary meaning of this claim language, but also provides more clarity for the jury. Therefore, Acushnet requests that the Court adopt its proposed construction.

4. **“which has a cis-1,4 content of at least 60% and a 1,2 vinyl content of at most 5%, has a Mooney viscosity( $ML_{1+4}$  (100° C)) of not more than 55, and satisfies the relationship:  $\eta \leq 20A-550$ , wherein A is the Mooney viscosity ( $ML_{1-4}$  (100° C)) of the second polybutadiene and  $\eta$  is the viscosity of the second polybutadiene, in mPa·s, at 25°C as a 5 wt % solution in toluene.”**

Acushnet’s Proposed Definition: Plain meaning, with the further understanding that the specification defines “M” in the term ( $ML_{1+4}$  (100°C)) as “Mooney viscosity,” ‘L’ stands for large rotor..., ‘1+4’ stands for a preheating time of 1 minute and a rotor rotation time of 4 minutes and “100°C” indicates that the measurement was carried out at a temperature of 100°C.”

As defined in the specification, the viscosity  $\eta$  is defined as viscosity in mPa·s units obtained by dissolving 2.28g of the polybutadiene to be measured in 50 ml of toluene and carrying out measurement with a specified viscometer at 25°C using a standard solution for the viscometer (JIS Z8809). Joint Claim Chart at 10.

Bridgestone's Proposed Definition. Plain and ordinary meaning. Joint Claim Chart at 10.

This claim language appears in claim 2 of the '961 patent, and is very similar to the language that appears in claim 1, discussed above. Claim terms that appear in more than one claim normally should be interpreted consistently. *See Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1119 (Fed. Cir. 2004) ("Unless otherwise compelled, when different claims of a patent use the same language, we give that language the same effect in each claim.")

Acushnet's proposed construction for this claim language is consistent with its proposed constructions for the same language in claim 1. Therefore, Acushnet requests that the Court adopt its proposed construction for this claim language.

### **C. U.S. Patent No. 5,743,817**

The '817 patent pertains to golf balls that allegedly exhibit improved feel, spin properties and iron control "without detracting from the trajectory and flying distance inherent to the solid golf ball." Ex. I ('817 Pat., Col. 1, ll. 28-33). The patent covers solid golf balls having a core and a cover enclosing the core. Ex. I ('817 Pat., Col. 1, ll. 34-36). Claim 1, the only asserted claim, reads:

A golf ball comprising a core and a cover wherein said core and said ball has a core hardness and a ball hardness respectively, wherein said core has a distortion of 2.9 to 4.0 mm under a load of 100 kg, the ratio of a core distortion under a load of 100 kg divided by a ball distortion under a load of 100 kg ranges from 1.0 to 1.3, and said cover consists of an ionomer resin as a resin component and has a thickness of 1.3 to 1.8 mm and a Shore D hardness of up to 60.

Ex. I ('817 Pat., Col. 6, ll. 48-56). Several limitations in this claim are in dispute.

#### **1. "cover consists of an ionomer resin as a resin component"**

Acushnet's Proposed Definition. "Consists of" means that the resin component of the cover includes only one ionomer resin and excludes other resins or blends of ionomer resins. Joint Claim Chart at 12.



*Bridgestone's Proposed Definition.* The resin component in the cover is ionomer resin. Joint Claim Chart at 12.

The parties claim constructions are different in a subtle but very important way. The dispute concerns whether the language “consists of an ionomer resin” requires the cover to have one, and only one, ionomer resin, or whether the cover can be made of blends of ionomer resins or of one ionomer resin combined with other components.

The term “consists of” has a specialized meaning in patent law that should be applied to this claim. The transitional phrase “consisting of” has a longstanding legal meaning that restricts the claim to only the specified element. *See Vehicular Techs. Corp. v. Titan Wheel Int'l*, 212 F.3d 1377, 1382 (Fed. Cir. 2000). By using the term “consisting of,” the drafter means “I claim what follows and nothing else.” *Id.* at 1383. Here, the claimed cover “consists of” a single ionomer resin as the resin component and nothing else.

The applicant could have claimed a cover made from a blend of ionomer resins—the specification includes a number of references to “mixtures of ionomer resins.” *See*, for example, Ex. I ('817 Pat., Col. 4, ll. 44-54). The applicant, however, opted for more restrictive claim language. The use of the term “consisting of” to limit the “ionomer resin” component limits the claim to only a single ionomer resin and not a blend of ionomers or of ionomeric and non-ionomeric resins. *See Abbott Labs.*, 334 F.3d at 1281.

This construction is also consistent with the prosecution history of the '817 patent. The prosecution history includes UK Patent Application GB 2 276 628 (“GB '628”), a prior art reference applied against the originally-filed claims by the patent examiner. *See Phillips*, 415 F.3d at 1322 (stating that “[t]he prosecution history ... consists of the complete record of the proceedings before the PTO and includes the prior art cited during the examination of the patent.”) GB '628 teaches that:

The inventors have found that as compared with the *conventional blend of hard and soft ionomer resins, a blend of a mid-hardness ionomer resin* (having a hardness intermediate between hard and soft



ionomer resins) and a soft ionomer resin alone experiences significantly less surface damage on an iron shot.

\* \* \*

The cover is based on a resin component consisting of (1) 30 to 100% by weight of *a first ionomer resin* in the form of an ethylene-methacrylic acid-acrylate terpolymer of flexural modulus 2,500 to 14,000 psi (17 to 97 MPa) and Shore D hardness of 20 to 59 and (2) 70 to 0% by weight of *a second ionomer resin* in the form of an ethylene-(methacrylic acid copolymer having a flexural modulus 20,000 to 30,000 psi (135 to 210 MPa) and a Shore D hardness of 56 to 64.

Ex. J (GB '628 at 3-4) (emphases added).

The examiner applied GB '628 in rejecting the original claims of the '817 patent. In responding to this rejection, Bridgestone limited the claims to a cover that "consists of an ionomer resin as a resin component." *See* Ex. K (Response to Office Action at 1 (Mar. 4, 1997)). Bridgestone then explicitly distinguished the claims over the references applied by the examiner, including: (1) U.S. Patent No. 4,858,924 to Saito *et al.* ("Saito '924") which teaches a cover including 65-97% of an ionomer resin and 3-35% of a flexible resin; and (2) GB '628, which as described above teaches a cover including a blend of a first and a second ionomer resin. *See* Ex. K (Response to Office Action at 3-7).

In overcoming Saito '924, Bridgestone distinguished the claimed cover from that of Saito '924:

Therefore, the cover of Saito '924 contains as an essential component the flexible resin. On the other hand, the cover of the presently claimed invention consists of an ionomer resin as a resin component. A cover consisting of an ionomer resin has superior durability as compared with a cover composed of a mixture of an ionomer resin and another resin because of compatibility.

Ex. K (Response to Office Action at 4) (emphases in original). In overcoming GB '628, Bridgestone stated:

Egashira (UK) discloses a golf ball comprising a solid core and a cover enclosing the core where:

the cover is based on a resin component consisting of (1) 30 to 100% by weight of *a first ionomer resin* in the form of an ethylene-methacrylic acid-acrylate terpolymer of flexural modulus 2,500 to

14,000 psi (17 to 97 MPa) and Shore D hardness of 20 to 59 and (2) 70 to 0% by weight of *a second ionomer resin* in the form of an ethylene-(methacrylic acid copolymer having a flexural modulus 20,000 to 30,000 psi (135 to 210 MPa) and a Shore D hardness of 56 to 64, and

the core is made of a rubber composition comprising 100 parts by weight of a base rubber and 0.2 to 1.5 parts by weight of pentachlorothiophenol and/or metal salt thereof.

Egashira *also* fails to disclose the combination of the cover thickness and the core distortion of the present golf ball.”

Ex. K (Response to Office Action at 6-7) (emphases added). Based on the manner in which Bridgestone distinguished its claims from the prior art references, Bridgestone should now be estopped from reclaiming—through claim construction—the subject matter that it surrendered to the PTO during prosecution of the ’817 patent. *See, e.g., Spectrum Int’l v. Sterilite Corp.*, 164 F.3d 1372, 1378 (Fed. Cir. 1998) (stating that “explicit statements made by a patent applicant during prosecution to distinguish a claimed invention over prior art may serve to narrow the scope of a claim.”); *Hockerson-Halberstadt, Inc. v. Avia Group Int’l*, 222 F.3d 951, 957 (Fed. Cir. 2000).

Thus, the proper interpretation of the term “consists of an ionomer resin as a resin component” is that the cover includes only one grade of ionomer resin and that is the only resin component in the golf ball cover—while the cover material can include other non-resin components. This interpretation is further supported by the disclaimers that Bridgestone made during prosecution of the ’817 patent.

Because “consists of an ionomer resin” is a legal term of art which is equivalent to the patentee saying “I claim ionomer resin and nothing else,” this term should be construed to mean that “the resin component of the cover includes only one ionomer resin and excludes other resins or blends of ionomer resins.”

#### **D. U.S. Patent No. 6,679,791**

Bridgestone’s ’791 patent discloses a golf ball with a “hard intermediate layer disposed between the core, which has an optimized hardness profile, and the cover which is softer than the intermediate layer.” Ex. L (’791 Pat., Col. 2, ll. 11-15). The asserted

claims are claims 11, 13, 16, and 26. Claim 1, on which claim 11 depends, requires “a hardness which gradually increases radially outward from the center to the surface thereof.” Ex. L (‘791 Pat., Col. 8, ll. 59-62). Claims 13 and 24, from which claims 16 and 26 depend, require “a hardness at the center and a hardness at the surface thereof which is greater than the hardness at the center thereof.” Ex. L (‘791 Pat., Col. 9, ll. 47-50, Col. 10, ll. 40-49).

There are several different methods in the industry to describe the deformation of a golf ball or golf ball core when it is struck by a club. The measurement is typically referred to as “hardness” or “compression,” with reference to the specific method or device used to test the deformation. In the ‘791 patent, Bridgestone claims a measurement of hardness on the JIS-C scale, which uses a device known as a “JIS-C probe” to press a needle into the surface of the golf ball core and measure the level of penetration. *See* Ex. M (BSO 59831-34 (JIS K 6253 Standard) at 2 (“durometer hardness”)). During the manufacture of rubber golf ball cores, the core is heated, causing its rubber to cure and thereby increase in hardness. Heat is applied from the outside of the core and diffuses inward. The extent of curing, along with hardness, therefore varies across the diameter of the core. This variation is the core hardness profile.

# 1. **“gradually increases”**

*Acushnet’s Proposed Definition:* Having a slope which increases and is not steep or abrupt. Joint Claim Chart at 13.

*Bridgestone’s Proposed Definition:* Plain and ordinary meaning. Joint Claim Chart at 13.

As used in the patent, the term “gradually increases” refers to the manner in which the core hardness varies at points between the center and the surface of the core. The specification of the patent teaches that this gradually increasing feature is “critical” to the invention. It states that:

*It is critical* for the core to have an optimized hardness profile in which the hardness gradually increases radially outward from the center toward the outside edge or surface of the core. That is, the core has a higher hardness at the surface than at the center.

Ex. L ('791 Pat., Col. 3, ll. 26-30) (emphasis added). "Gradually increasing" is used repeatedly and consistently in the specification when describing the hardness profile. *See* Ex. L ('791 Pat., Col. 1, l. 42; Col. 2, ll. 6-9; Col. 3, ll. 26-31; Col. 4, ll. 1-8). This usage is generally consistent with the ordinary meaning of the term.

The OXFORD ENGLISH DICTIONARY offers a particularly appropriate definition of "gradual":

Of a process: Taking place by degrees; advancing step by step; slowly progressive. Of a slope: Gentle, not steep or abrupt.

Ex. N (OXFORD ENGLISH DICTIONARY, <http://dictionary.oed.com> (last visited Oct. 31, 2006)). Acushnet's construction is derived from this definition. The claim limitation requires the core profile to have a hardness which increases gradually and does not change its value or direction in a steep or abrupt way. Thus, the hardness gradient must increase smoothly from the center to the surface without any abrupt changes in value or direction.

The prosecution history confirms this meaning. During prosecution, the applicant distinguished two prior art references based on the "gradually increasing" feature of the core. The patentee distinguished the Moriyama<sup>7</sup> reference because it "fails to teach" the "gradually increasing" profile. *See* Ex. O (Jan. 29, 2003 Amendment at p. 7). *See also* Ex. P (Interview Summary at p. 3). Moriyama teaches the center-surface hardness difference, but does not describe how hardness increases between the two points:

It is required that the center 1 of the golf ball of the present invention has a difference between the surface hardness and central point hardness of not more than 10. . . .

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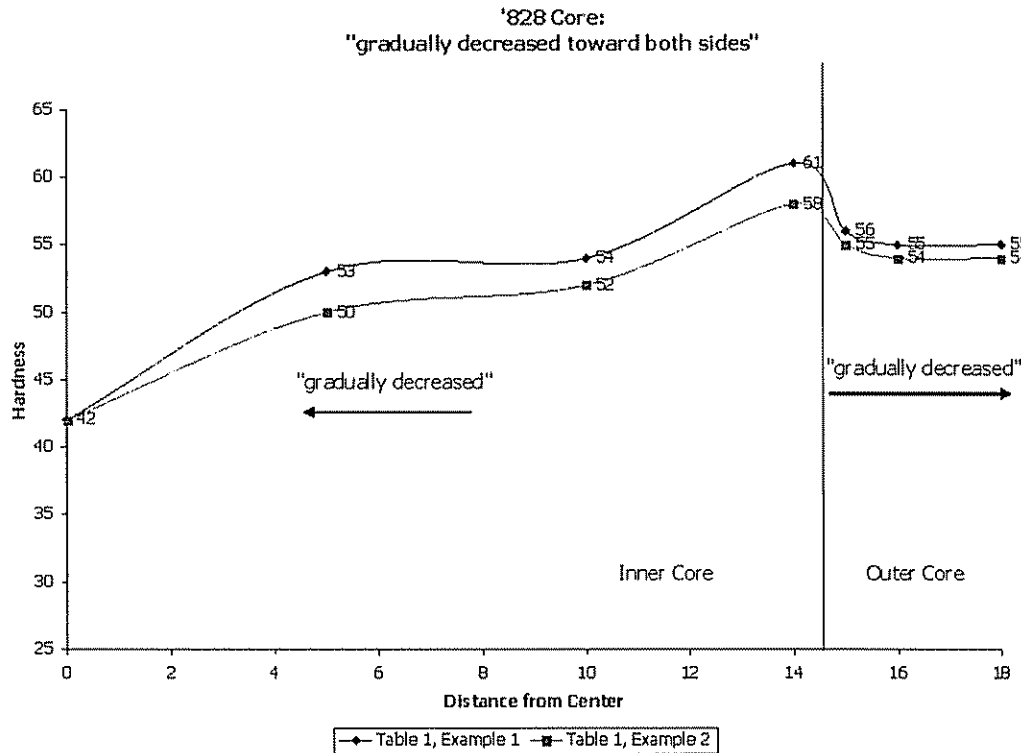
<sup>7</sup> U.S. Patent No. 6,336,872 ("Multi-piece Solid Golf Ball").

Ex. Q (U.S. Patent No. 6,366,872: Col. 3, ll. 23-26). The patentee likewise distinguished the Nakamura<sup>8</sup> reference because its core “fails to *gradually increase* from the core center to the core surface.” See Ex. O (Jan. 29, 2003 Amendment at p. 7) (emphasis added). See also Ex. P (Interview Summary at p. 3). Nakamura teaches a core profile which gradually increases from the center to 4mm from the surface but then decreased from 4mm to 2mm from the surface. See Ex. O (Jan. 29, 2003 Amendment at p. 7); Ex. R (U.S. Patent No. 5,803,833: Col. 2, ll. 54-67). Clearly, this abrupt change in slope falls outside the meaning of “gradually increases.”

Other prior art cited in the prosecution history also informs the definition of “gradually increases.” Ex. S (U.S. Patent No. 5,184,828 (“Solid Three-piece Golf Ball”)) describes a two-piece core which “has such a hardness distribution that the peak of hardness appears at the outer site in the inner core, which is near the interface between the inner core and the outer layer and that the hardness *gradually decreased toward both sides*.” Ex. S (‘828 Pat., Col. 6, ll. 16-21) (emphasis added). When the hardnesses of the example cores are plotted, the “gradually decreased” hardnesses have a gentle, non-abrupt slope:

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<sup>8</sup> U.S. Patent No. 5,803,833 (“Two-piece Solid Golf Ball”).



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The patentee consistently used the term “gradually increases” to refer to a distinct property of the core hardness between the center and the surface. He used the term to exclude profiles such as Nakamura that show abrupt changes in direction. This usage is consistent with the ordinary meaning of the term. Consequentially, the consistent use of the term suggests a specific usage consistent with the ordinary meaning which defines a slope for all points between the center and the surface and is continuous.

A dictionary definition is appropriate so long as it “does not contradict any definition found in or ascertained by a reading of the patent documents.” *Phillips*, 415 F.3d at 1322-23, quoting *Vitronics Corp.*, 90 F.3d at 1584 n.6. “Not steep or abrupt” captures the manner in which “gradually increases” was used in the patent. It describes

<sup>9</sup> This graph is based on Examples 1 and 2 in Table 1 of the '828 patent. See Ex. S ('828 Pat., Col. 6, l. 25 – Col. 8 l. 4). The interface between the inner and outer core, identified by the vertical line on the graph, is plotted at 14.85 mm because the inner core diameter was identified as 29.7 mm in Table 1. See Ex. S ('828 Pat., Col. 8, Table 1). The plotted values are taken from Table 1. See Ex. S ('828 Pat., Col. 8, Table 1).

the slope of the profile at points between the center and the surface, and it excludes abrupt changes in slope like that found in the Nakamura reference.

**2. “a hardness at the center and a hardness at the surface thereof which is greater than the hardness at the center thereof.”**

Claims 13 and 24 of the ‘791 patent claim a golf ball core with “a hardness at the center and a hardness at the surface thereof which is greater than the hardness at the center thereof.” Ex. L (‘791 Pat., Col. 9, ll. 47-50, Col. 10, ll. 40-49).

*Acushnet’s Proposed Definition:* A hardness at the center and a hardness at the surface thereof which is greater than the hardness at the center thereof, which gradually increases radially outward.

“Gradually increases” means “having a slope which increases and is not steep or abrupt.” Joint Claim Chart at 15.

*Bridgestone’s Proposed Definition:* Plain and ordinary meaning. Joint Claim Chart at 15.

The claim limitation “a hardness at the center and a hardness at the surface thereof which is greater than the hardness at the center thereof” should be construed to include the limitation “gradually increasing” because the specification and prosecution make it clear that it is critical to the invention that the hardness profile gradually increase. *See* Ex. L (‘791 Pat., Col. 3, ll. 26-30). The specification has identified two characteristics of the hardness profile – the broader requirement that the core have a higher hardness at the surface than at the center, and the narrower requirement that the hardness be gradually increasing. *See* Ex. L (‘791 Pat., Col. 3, l. 32 – Col. 4, l. 8). The specification then goes on to state that the narrower gradually increasing profile is a critical element of the invention. *See* Ex. L (‘791 Pat., Col. 3, ll. 26-30). Consequentially, claim language which would, in the absence of the specification, appear to cover the broader hardness profile, must be construed in light of the specification to cover the narrower gradually increasing profile.

The Detailed Description of the Invention states:



It is *critical* for the core to have an *optimized hardness profile* in which the hardness *gradually increases* radially outward from the center toward the outside edge or surface of the core.

Ex. L ('791, Col. 3, ll. 26-29) (emphases added). The patentee has, therefore, clearly stated that it is critical that the hardness profile be gradually increasing. A claim should be construed to cover the invention as taught in the specification. *See Inpro II Licensing v. T-Mobile USA, Inc.*, 450 F.3d 1350, 1355-56 (Fed. Cir. 2006) (construing a broad claim to include a limitation identified in the specification "as a 'very important feature' of the invention" and described in the "Summary of the Invention."). Furthermore, the patentee has distinguished prior art on the grounds that it did not teach a gradually increasing hardness profile. *See* Ex. O (Jan. 29, 2003 Amendment at 7-8) ("References fail to teach a core which gradually increases radially outward from the center to the surface thereof"); Ex. P (Interview Summary at p. 3); *Kinik Co. v. Int'l Trade Comm'n*, 362 F.3d 1359, 1365 (Fed. Cir. 2004) ("Claims cannot be construed as encompassing the prior art that was distinguished in the specification and disclaimed during prosecution.").

The specification has not described any hardness profiles with a greater hardness at the surface than at the center which are not "gradually increasing." Indeed, the patentee always mentioned that the hardness profile was gradually increasing – in the Abstract, Summary of the Invention, and Detailed Description of the Invention.<sup>10</sup> Furthermore, the patentee has not enabled any unique technique which would produce a core without a gradually increasing gradient – the only teachings regarding the composition and processing of the golf ball cores would yield cores with a "gradually increasing" hardness profile. *See* Ex. L ('791 Pat., Col. 2, l. 22 – Col. 3, l. 25).

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<sup>10</sup> *See, e.g.*, Ex. L ('791 Pat., Abstract ("The elastic core has a hardness which gradually increases radially outward from the center to the surface thereof."); Col. 1, ll. 41-43 (in the section titled "Summary of the Invention:" "The elastic core has a hardness which gradually increases radially outward from the center to the surface thereof); Col. 4, ll. 1-2 ("the core has a hardness gradually increasing radially outward from the center to the surface thereof")).



**E. U.S. Patent No. 5,553,852**

Bridgestone's '852 patent discloses a solid golf ball with a core, intermediate layer, and a cover, with claims directed to the physical properties of those layers, such as thickness, specific gravity, and hardness measured on a JIS-C scale. Bridgestone has asserted claim 1, which claims, in relevant part, an "intermediate layer having a thickness of at least 1 mm" and a "cover having a thickness of 1 to 3 mm." Ex. T ('852 Pat., Col. 7, ll. 3-4, 8).

**1. "a thickness of at least 1 mm" and "a thickness of 1 to 3 mm"**

Acushnet's Proposed Definition: "A thickness of at least 1 mm" – a thickness that is no less than 1.0 mm.

"A thickness of 1 to 3 mm" – a thickness that is no less than 1.0 mm and is no greater than 3.0 mm. Joint Claim Chart at 4.

Bridgestone's Proposed Definition: For both – plain and ordinary meaning. Joint Claim Chart at 4.

The question for the Court here is whether the construction of "at least 1 mm" and "1 to 3 mm" encompasses any values outside the stated ranges. There is no suggestion that the measurements in the '852 are approximations or otherwise imprecise. The plain and ordinary meaning of "at least 1 mm" and "1 to 3 mm" in fact suggests that there is no margin of error with regard to the measurement of 1 mm or 3 mm. Thus, under ordinary circumstances, Acushnet would agree that the plain and ordinary meaning should govern.

In its responses to Acushnet's requests for admission, however, Bridgestone made the seemingly contrary responses that (1) it has tested the outer cover thickness of the Pro V1 and Pro V1x golf balls "to be less than 1 mm" and that (2) it has measured the outer cover thicknesses of the Pro V1 and Pro V1x to "be within the scope of the claim 1 of the '852 patent." Ex. U (Pls.'s Supp. Responses to Def.'s Requests for Admission Nos. 21 and 22). At the same time, Bridgestone has maintained that those balls infringe the '852 patent both literally and under the doctrine of equivalents. *See* Ex. F (Pls.' Response to

Def.'s Interrog. No. 2). Thus, in an effort to avoid any ambiguity with regard to whether any measurement less than 1 mm may fall within the plain meaning of "at least 1 mm," Acushnet requests that the Court construe the term "at least 1 mm" to mean a thickness that is no less than 1.0 mm. Acushnet similarly requests that the Court construe the term "a thickness of 1 to 3 mm" to mean a thickness of 1.0 to 3.0 mm.

## **V. PROPOSED CLAIM CONSTRUCTIONS IN ACUSHNET'S PATENTS**

### **A. U.S. Patent No. 6,818,705**

The '705 patent discloses a multilayered solid golf ball that has a center, an inner cover, and a polyurethane outer cover. Ex. V ('705 Pat., Col. 33, ll. 41-51). The only asserted claim is claim 4, which depends from claim 1. Claim 1 requires a center "comprising a material [formed] from the conversion reaction of at least a cis-to-trans catalyst and a polybutadiene, wherein the material has a molecular weight of greater than about 200,000 and a resilience index of at least about 40." Ex. V ('705 Pat., Col. 33, ll. 43-47).<sup>11</sup> Claim 4 adds the requirement that the cis-to-trans catalyst of claim 1 "comprises at least one of" a number of chemical compounds, including an organosulfur compound. Ex. V ('705 Pat., Col. 33, ll. 59-64).

Polybutadiene rubbers include three distinct molecular structures, known as isomers. Specifically, polybutadienes have a cis-isomer component, a trans-isomer component, and a vinyl isomer component. The inventors of the '705 patent discovered that they could create a particularly effective golf ball core by using a polybutadiene rubber with a high cis-isomer content, then converting some of that cis-isomer to trans-isomer in a chemical reaction with a compound they identified as a "cis-to-trans catalyst." Ex. V ('705 Pat., Col. 8, l. 66 – Col. 9, l. 5; Col. 11, l. 62 – Col. 12, l. 44). The inventors

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<sup>11</sup> The parties agree that the term "farmed" is a typographical error for the term "formed." Joint Claim Chart at 27.

observed that the conversion of cis-isomer to trans-isomer (also known as a “cis-to-trans conversion”) increased the resilience and lowered the compression of the golf ball core. See Ex. V (‘705 Pat., Col. 11, l. 62 – Col. 12, l. 28). Increased resilience results in increased initial velocity of the golf ball off the club, while lowered compression gives the golf ball a preferred softer “feel” for the golfer. Thus, the cis-to-trans conversion results in what Acushnet identified as “soft and fast” technology.

1. **“a material [formed] from the conversion reaction of at least a cis-to-trans catalyst and a polybutadiene, wherein the material has a molecular weight of greater than about 200,000 and a resilience index of at least about 40”**

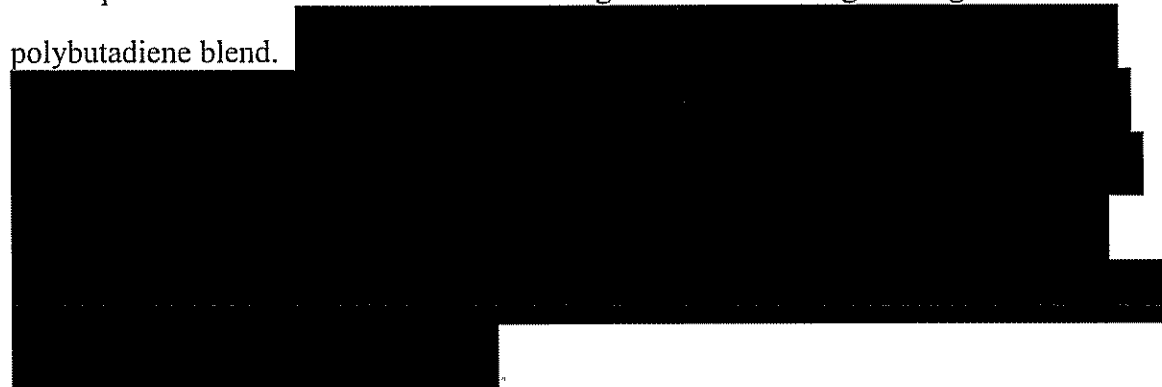
*Acushnet’s Proposed Definition:* Plain meaning. Joint Claim Chart at 27.

*Bridgestone’s Proposed Definition:* “[A] material” refers to “a cured product formed from the conversion reaction of at least a cis-to-trans catalyst and a polybutadiene.”

“The material” refers to “a material” preceding it in the claim, is defined as set forth above, and the material has a molecular weight of greater than about 200,000 and a resilience index of at least about 40. Joint Claim Chart at 27.

The question for the Court is whether this term requires construction, since the dual uses of the term “material” have a clear plain meaning. The claim refers to “a material [formed] from the conversion reaction of at least a cis-to-trans catalyst and a polybutadiene,” Ex. V (‘705 Pat., Col. 33, ll. 43-45), which may be either a cured or uncured material. It then states “wherein the material has a molecular weight of greater than about 200,000 and a resilience index of at least about 40,” Ex. V (‘705 Pat., Col. 33, ll. 45-47), which is a clear reference to properties of an uncured polybutadiene. One of ordinary skill in the art at the time of filing of the ‘705 patent would thus understand the plain meaning of “material” in both instances to refer to the uncured blend of a cis-to-trans catalyst and a polybutadiene rubber.

The first instance of the term “material” states plainly that the material is “[formed] from the conversion reaction of at least a cis-to-trans catalyst and a polybutadiene.” Ex. V (‘705 Pat., Col. 33, ll. 43-45). Polybutadienes consist of three isomer components – cis-isomer, trans-isomer, and vinyl – which combine in various amounts to form 100% of the polybutadiene material. One of ordinary skill in the art would understand that the blending of a cis-to-trans catalyst, such as an organosulfur compound, with an uncured polybutadiene converts some of the cis-isomer to trans-isomer. One of ordinary skill in the art would also understand that a conversion reaction occurs prior to the formation of the hardened golf ball core through curing of the polybutadiene blend.



That plain meaning is supported by the second instance of the term “material,” which states that “the material has a molecular weight of greater than about 200,000 and a resilience index of at least about 40.” Ex. V (‘705 Pat., Col. 33, ll. 45-47). One of ordinary skill in the art similarly would understand the molecular weight limitation to refer to an uncured blend of a cis-to-trans catalyst and a polybutadiene, because one cannot derive the molecular weight of a cured polybutadiene. *See* Ex. X (Bulpett Dep., pp. 213:17-214:10). Because the terms have a plain and ordinary meaning as would be understood by one of ordinary skill in the art, the construction of those terms “involves little more than the application of the widely accepted meaning of commonly understood words.” *Phillips*, 415 F.3d at 1314.

That plain meaning is fully supported by the specification. *See Phillips*, 415 F.3d at 1321 (the specification “acts as a dictionary when it expressly defines terms used in the

claims or when it defines terms by implication”), quoting *Vitronics Corp.*, 90 F.3d at 1582. The patent repeatedly describes the molecular weight and resilience index as characteristics of the uncured polybutadiene. *See* Ex. V (‘705 Pat., Col. 5, ll. 43-46) (“The present invention is directed to a golf ball comprising a center comprising a *polybutadiene* having a molecular weight of greater than 200,000 and a resilience index of at least about 40.”) (emphasis added). *See also* Ex. V (‘705 Pat., Col. 1, ll. 23-26; Col. 7, ll. 10-13; Col. 8, ll. 33-36, 42-45; Col. 25, ll. 5-6; Col. 12, ll. 28-32). In fact, the patent expressly identifies the resilience index as a property of CB 23, CB 22, BR-60, BR-40 Taktene 8855, CARIFLEX BR1220, and BUDENE 1207G, all of which are uncured polybutadiene rubbers. *See* Ex. V (‘705 Pat., Table 1, Col. 25, ll. 17-30).

Bridgestone, however, contravenes settled patent law in its attempt to import a curing/molding limitation from the specification.<sup>12</sup> It is improper to import limitations from the specification into the claims “unless the patentee clearly ‘intends for the claims and the embodiments in the specification to be strictly coextensive.’” *Pfizer Inc. v. Ranbaxy*, 457 F.3d 1284, 1290 (Fed. Cir. 2006), quoting *Phillips*, 415 F.3d at 1323. Here, the patent states that the cis-polybutadiene “preferably may be converted to the trans-isomer during the molding cycle.” Ex. V (‘705 Pat., Col. 12, ll. 23-28). There is no clear intent, however, to limit the claims to that preferred embodiment. Instead, by

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<sup>12</sup> Bridgestone is advancing an invalidity or indefiniteness position based on an alleged inconsistency in claim 1’s use of the term “material.” As shown above, there is no question that the second instance of the term “material” refers to an uncured composition. Thus, in an attempt to create an inconsistency between the two instances of the term “material,” Bridgestone seeks to add the requirement that the first instance of “material” must refer to a cured golf ball core. *See* Joint Claim Chart at 27. As shown above, however, the plain language of the claim makes no reference to a curing process. *See* Ex. V (‘705 Pat., Col. 33, ll. 43-47). Nor does Bridgestone’s added limitation find any support in the claims or the specification, as the patent nowhere limits the claimed cis-to-trans conversion reaction to the curing process. To the contrary, the patent states only that “[t]he cis-to-trans conversion requires the presence of a cis-to-trans catalyst,” providing examples of such catalysts as an organosulfur compound and a metal-containing organosulfur compound. Ex. V (‘705 Pat., Col. 12, ll. 36-44). There is no suggestion that curing or molding of the core is also required.

stating that the cis-to-trans conversion “preferably may be converted” during the molding cycle, the patent indicates that the conversion may occur elsewhere. Thus, the specification supports a broader construction than the narrow interpretation offered by Bridgestone.

Bridgestone’s attempt to manufacture an invalidity or indefiniteness position based on its proposed construction further runs afoul of settled law that “claims should be construed, if possible, so as to sustain their validity.” *Rhine v. Casio Inc.*, 183 F.3d 1342, 1345 (Fed. Cir. 1999). Claims should be construed to preserve validity “where the construction is ‘practicable’ and does not conflict with the explicit language of the claim.” *Id.* As shown above, Acushnet’s proposed construction fits squarely within the explicit language of the claim, while Bridgestone seeks to import a limitation from the specification to create an invalidity argument. Thus, when choosing between the parties’ proposed constructions, the Court should choose the construction that preserves the claim’s validity.

Thus, the Court should apply the plain meaning of “material,” which in both instances refers to an uncured blend of a cis-to-trans catalyst and a polybutadiene.

## 2. “resilience index”

*Acushnet’s Proposed Definition:* The difference in loss tangent measured at 10 cpm and 1000 cpm divided by 990 (the frequency span) multiplied by 100,000 (for normalization and unit convenience). The loss tangent is measured using an RPA 2000 manufactured by Alpha Technologies of Akron, Ohio. The RPA 2000 is set to sweep from 2.5 to 1000 cpm at a temperature of 100° C using an arc of 0.5 degrees. An average of six loss tangent measurements are acquired at each frequency and the average is used in calculation of the resilience index. Joint Claim Chart at 29.

*Bridgestone’s Proposed Definition:* The difference in loss tangent measured at 10 cpm and 1000 cpm divided by 990 (the frequency span) multiplied by 100,000 (for normalization and unit convenience). Joint Claim Chart at 29.

The question for the Court is whether the term “resilience index” should be afforded the complete definition expressly provided by the patentees in the “definitions” section of the ‘705 patent. It is axiomatic that, when an inventor expressly defines a claim term with “reasonable clarity, deliberateness, and precision,” the inventor’s lexicography governs. *Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1370 (Fed. Cir. 2005), quoting *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). In the ‘705 patent, the inventors included a “definitions” section in which they defined the term “resilience index” as follows:

The difference in loss tangent measured at 10 cpm and 1000 cpm divided by 990 (the frequency span) multiplied by 100,000 (for normalization and unit convenience). The loss tangent is measured using an RPA 2000 manufactured by Alpha Technologies of Akron, Ohio. The RPA 2000 is set to sweep from 2.5 to 1000 cpm at a temperature of 100° C using an arc of 0.5 degrees. An average of six loss tangent measurements are acquired at each frequency and the average is used in calculation of the resilience index.

Ex. V (‘705 Pat., Col. 11, ll. 13-22). The patent then expresses resilience index as the equation “Resilience Index = 100,000•[(loss tangent@10 cpm)-(loss tangent@1000 cpm)]/990.” Ex. V (‘705 Pat., Col. 11, ll. 25-26). The patent states affirmatively that the loss tangent component of the resilience index equation “is measured” using the specific instrument and settings set forth above. Thus the patentees used the requisite “clarity, deliberateness, and precision” to define the term “resilience index” by reference to the specific instrument and settings used to acquire the necessary data, as the patent law allows them to do.

Bridgestone’s proposed definition fails because it ignores a substantial portion of the express definition provided by the inventors. Bridgestone simply disregards the second half of the inventors’ express definition, without providing any reasonable basis for doing so. Here, the inventors provided a “definitions” section of the ‘705 patent in



which they expressly define “resilience index” by specific and unambiguous reference to the instrument and settings to be used when measuring the index.

Because the inventors provided an express definition with the requisite clarity, deliberateness, and precision, the Court should construe the term “resilience index” in accordance with the inventors’ stated definition.

**B. U.S. Patent Nos. 4,729,861, 4,936,587, and 5,080,367**

The ‘861, ‘587, and ‘367 patents (collectively, “the Lynch patents”) all relate to the depths, diameters, and spacing of the dimples on the surface of a golf ball. The inventors discovered that they could improve the flight distance of golf balls by controlling the spatial arrangement of dimples on the surface of the golf ball and by further controlling the ratio of depth to diameter for the individual dimples. Ex. Y (‘861 Pat., Col. 1, ll. 18-39; Col. 2, ll. 22-23). The three patents share similar specifications and claim similar subject matter. The ‘861 patent is directed to a method of manufacturing a golf ball with the claimed dimple parameters (*see* Ex. Y (‘861 Pat., Col. 9, ll. 56-58)), the ‘587 patent is directed to “a finished golf ball,” (Ex. Z (‘587 Pat., Col. 9, l. 55)), and the ‘367 patent is directed to “a finished, painted golf ball” (Ex. AA (‘367 Pat., Col. 9, l. 59)).

1. **“determining the dimple number, dimple diameter and dimple depth by: (a) selecting the number of dimples to be used, the said number of dimples being between 182 and 392; (b) selecting a dimple diameter and dimple depth”**

*Acushnet’s Proposed Definition:* Plain meaning. Joint Claim Chart at 19,

*Bridgestone’s Proposed Definition:* Determining the number of dimples to be used selecting the number of dimples to be between 182 and 392 and determining the dimple diameter and depth by selecting the dimple diameter and depth .... Joint Claim Chart at 19.

The question for the Court is whether the plain meaning of the ‘861 patent phrase “determining the dimple number, dimple diameter and dimple depth by: (a) selecting the



number of dimples to be used, the said number of dimples being between 182 and 392; (b) selecting a dimple diameter and dimple depth” (Ex. Y (‘861 Pat. Col. 9, ll. 59-66)) is unclear and requires redrafting. Acushnet has asserted the plain meaning because the language is clear. As stated by the Federal Circuit in *Brown v. 3M*: “These are not technical terms of art, and do not require elaborate interpretation.” *Brown v. 3M*, 265 F.3d 1349, 1352 (Fed. Cir. 2001). See also *Eli Lilly & Co. v. Aradigm Corp.*, 376 F.3d 1352, 1360 (Fed. Cir. 2004) (“claim construction is required only ‘when the meaning or scope of technical terms and words of art is unclear and in dispute and requires resolution to determine’ the issue before the court”), quoting *United States Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997). Rather, the phrase uses non-technical terms that can be easily understood by the jury.

Bridgestone, however, proposes redrafting the language so that the phrase would read “determining the number of dimples to be used selecting the number of dimples to be between 182 and 392 and determining the dimple diameter and depth by selecting the dimple diameter and depth ....” Joint Claim Chart at 19. Bridgestone’s proposed construction is a simple rearrangement of the words that offers no additional insight into the meaning of the phrase, even if such additional insight were required. In effect, Bridgestone asks the Court to redraft the language of the claim, without providing any justification for doing so. Absent any need for interpretation, Bridgestone’s request violates the “well-established rule that ‘courts may not redraft claims.’” *Merck & Co.*, 395 F.3d at 1380, quoting *Chef Am., Inc. v. Lamb Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004). Thus, the Court should apply the plain meaning of this term as proposed by Acushnet.

## 2. “edge”

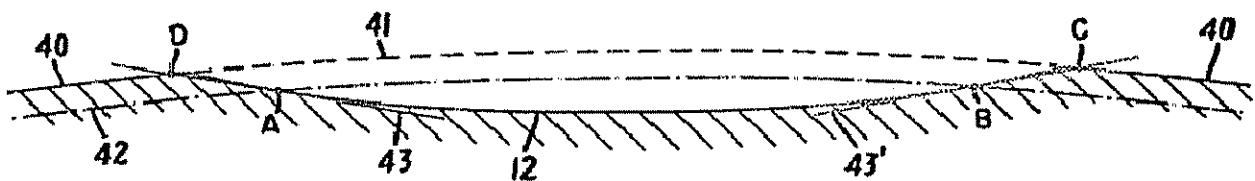
*Acushnet’s Proposed Definition.* The intersection of the periphery of the golf ball or its continuation and a tangent to the sidewall of the dimple at a

point 0.003 inches below the periphery of the golf ball or its continuation.  
Joint Claim Chart at 21, 23, 25.

*Bridgestone's Proposed Definition:* The point of intersection of the periphery of the golf ball or its continuation and a tangent to the sidewall of the dimple at a point 0.003 inches below the periphery of the golf ball or its continuation. Joint Claim Chart at 21, 23, 25.

The question for the Court here is whether the edge of the dimple is a single point or whether it is the collection of points that circumscribe the dimple on the surface of the golf ball. The claims in the three patents define “the edge of the dimple” as “the point of intersection of the periphery of the golf ball or its continuation and a tangent to the sidewall of the dimple at a point 0.003 inches below the periphery of the golf ball or its continuation . . .” Ex. Y ('861 Pat., Col. 10, ll. 45-50); Ex. Z ('587 Pat., Col. 9, ll. 61-66); Ex. AA ('367 Pat., Col. 9, l. 66 – Col. 10, l. 2). Because the dimples on a golf ball, however, are not mere cross-sections, the edge of the dimple as a whole is the sum of all such intersections, which collectively circumscribe the dimple on the outer surface of the golf ball.

The Lynch patents identify the location of the edge as the cross-section of a sphere. A cross-sectioned example of the described intersection is shown in Fig. 3 from the '861 patent:



**FIG. 3**

As is shown in Fig. 3, dimple edges generally are rounded, so that there is no clear delineation of where the edge is precisely located. As discussed above, the Lynch patents identify the precise location of the edge by drawing an imaginary sphere (42) that is 0.003 inches beneath the outer surface of the golf ball (40) and its continuation (41). Tangent lines (43 and 43', highlighted in yellow) are then drawn at points A and B where

the imaginary sphere intersects the side of the dimple. The edge points (points C and D in cross-section) are then located where the tangent lines intersect the outer surface of the golf ball (40) or its continuation (41). *See* Ex. Y ('861 Pat., Col. 6, ll. 15-50; Figs. 3-5); Ex. Z ('587 Pat., Col. 5, l. 64 – Col. 6, l. 31; Figs. 3-5); Ex. AA ('367 Pat., Col. 6, ll. 1-37; Figs. 3-5). Thus, Fig. 3 and its corresponding written description identify the edge of the dimple in cross-section only, which necessarily results in two points of intersection between the tangent lines and the outer surface of the golf ball.

Bridgestone's suggested definition of the edge as "the point of intersection" simply repeats the language of the claim, but misses the nuanced difference between the dimple edge in cross-section versus the dimple edge as a whole. Because the concept of the dimple edge should be understood to refer to the complete edge, and not just a cross-section thereof, the Court should adopt the construction proposed by Acushnet.

## VI. CONCLUSION

For the reasons set forth above, Acushnet respectfully requests that the Court construe the disputed terms as proposed by Acushnet in the Joint Claim Chart.

Respectfully submitted,

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760132 / 28946

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE**

**CERTIFICATE OF SERVICE**

I, David E. Moore, hereby certify that on November 6, 2006, the attached document was hand delivered to the following persons and was electronically filed with the Clerk of the Court using CM/ECF which will send notification to the registered attorney(s) of record that the document has been filed and is available for viewing and downloading:

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